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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,177	09/23/2003	Gregor Tuma	SCHWP0181USA	2238

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EXAMINER

HOEKSTRA, JEFFREY GERBEN

ART UNIT	PAPER NUMBER
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3736

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/670,177

Applicant(s)

TUMA ET AL.

Examiner

Jeffrey G. Hoekstra

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Notice of Amendment

1. In response to the amendment filed on 02/13/2007, amendment(s) to the specification; amended claim(s) 15, 16, 17, 21, and 22; and new claim(s) 24 is/are acknowledged. The current rejections of the claim(s) 13-23 is/are *withdrawn*. The following new and reiterated grounds of rejection are set forth:
2. The Examiner notes for the purposes of examination, although indicated as *previously presented* and apparently comprising a non-compliant amendment, claims 16, 21, and 22 were treated as *currently amended* and thus examined on the amended merits.

Drawings

3. The drawings are objected to because *Figures 1 and 3 appear to be informal, hand-drawn illustrations of the invention*. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary

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to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, *the storage unit, data output device, the display, and the manually operable force-applying device* must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the

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applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

5. Claim 15 is objected to because of the following informalities: the positive recitation of "the detected positions" appears to lack antecedent basis and may render the claim indefinite. Appropriate correction is required.

6. Claim 15 is objected to because of the following informalities: the positive recitation of "the measured force" appears to lack antecedent basis and may render the claim indefinite. Appropriate correction is required.

7. Claim 17 is objected to because of the following informalities: the positive recitation of "a computational unit in data communications with" appears to contain a typographical error. The Examiner notes Applicant may have intended to positively recite "a computational unit in data communication with". Appropriate correction is required.

8. Claim 17 is objected to because of the following informalities: the positive recitation of "the detected positions" appears to lack antecedent basis and may render the claim indefinite. Appropriate correction is required.

9. Claim 17 is objected to because of the following informalities: the positive recitation of "the force measured" appears to lack antecedent basis and may render the claim indefinite. Appropriate correction is required.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 13-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Taylor et al. (US 6,231,526 B1, hereinafter Taylor) as broadly as structurally claimed.

12. For claims 15 and 17-19, Taylor discloses a computerized and/or automated surgical assistance device (as best seen in Figures 2, 3, and 10) (10, 120, 140) for positioning, locating, and moving surgical instruments (column 1 lines 13-17 and abstract) with or without a surgeons assistance (column 1 lines 33-40, column 3 lines 11-48, and column 4 lines 6-50), comprising:

- a force applying device (12, 14, 142, 144, 242) comprising a robot (the computer controlled force applying device recited in column 8 lines 8-38) or a manually-operable force applying device (the surgeon controlled force applying device recited in column 8 lines 8-38) that is capable of applying a force in a defined direction to the joint and/or to structures connected to the joint (column 20 lines 10-62);
- a force measuring device (95) coupled to the robot and capable of measuring the force applied by the robot to the joint and/or to structures connected to the joint (column 15 lines 28-38);

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- a detection device (122) capable of detecting positions of joint components forming the joint and/or positions of structures connected to or to be connected to the joint (column 12 lines 1-64); and
- a computational unit (124, 243) in data communication with said force measuring device and said detection device (column 12 lines 1-64),
- wherein said computational unit is capable of receiving data from the force measuring device and detection device and capable of being configured to ascertain from said data the aperture angle of the joint for a particular applied force based on the detected positions and the measured force (column 12 lines 1-64, column 20 lines 10-62).

13. For claim 13, Taylor discloses said device, further comprising a storage unit for storing (the memory of computer 124, 243) a geometric structure (column 13 lines 5-16) of the joint and/or reference values (column 13 lines 5-16) and capable of determining the aperture angle.

14. For claims 14 and 16, Taylor discloses said device, wherein a data output device (128,247) comprising a display is provided that is capable of automatically displaying the applied force measured by the force measuring device and is capable of outputting the ascertained aperture angle (column 13 lines 49-65, column 20 lines 10-62).

15. For claim 20, Taylor discloses said device, wherein the detection device is capable of detecting how far a joint or structure connected to the joint moves when a particular force is applied (column 12 lines 1-64, column 20 lines 10-62).

16. For claim 21, Taylor discloses said device, further comprising reference markers (112, 224) attached to the joint and/or the structures connected to the joint, wherein the detection device detects positions of the reference markers (column 12 lines 1-64, column 17 lines 61-67).

17. For claim 22, Taylor discloses said device, wherein the computational unit is capable of registering the joint and/or the structures connected to the joint based on the detected positions of the reference markers (column 12 lines 1-64, column 17 lines 61-67, column 20 lines 10-62).

18. For claim 23, Taylor discloses said device, further comprising a display, wherein the computational device is capable of providing a visual representation (via display 128,247) of the ascertained aperture angle for viewing on the display (column 12 lines 1-64, column 20 lines 10-62).

19. For claim 24, Taylor discloses said device, wherein the computational unit is capable of comparing the ascertained aperture angle to a previously recorded reference value for a particular applied force in the defined direction (column 12 lines 1-64, column 13 lines 49-65, column 17 lines 61-67, column 20 lines 10-62).

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Peshkin et al. (US 5,799,055) and Bernoski (US 6,370,418 B1) both disclose devices for measuring positions and conducting computer-based assistive surgery with the use of robots.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey G. Hoekstra whose telephone number is (571) 272-7232. The examiner can normally be reached on Monday through Friday, 8:00 a.m. to 5:00 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max F. Hindenburg can be reached on (571) 272-4726. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



JH

